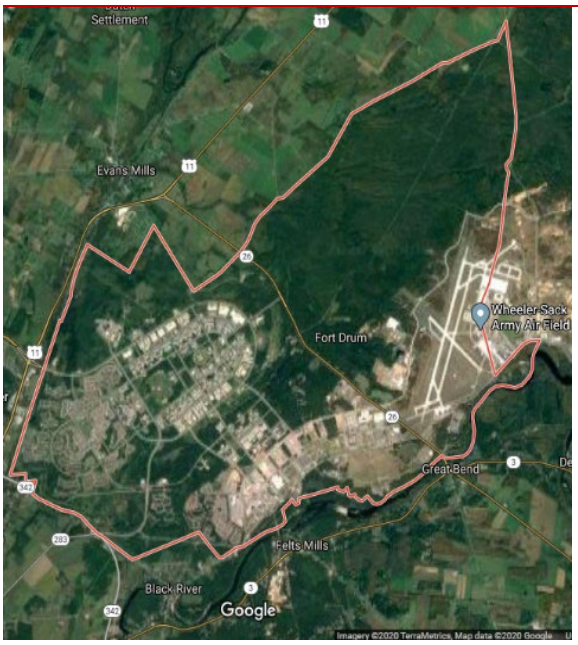
Federal Projects

F-35A Building: Vermont Air National Guard

South *Burlington*, *VT*

RAN Fire Protection Engineering assisted with the commissioning of emergency voice communication systems. Furthermore, RAN provided extensive troubleshooting and coordination of multiple engineering disciplines and trades to achieve success to ensure the project met all construction deadlines and needs. RAN's services allowed for all F-16s to be sent away, in order for 20 F-35A fighter jets to be delivered. As of 2019, the Vermont Air National Guard was the first Air National Guard unit to acquire the F-35A fighter jet.



Fort Drum Army Base

Fort Drum, NY

RAN Fire Protection has completed over 20 projects for the Fort Drum US Army Base. Projects extend from fire alarm system design and code consulting to fire sprinklers and clean agent systems.

RAN performed a code evaluation of the building completed along with the basic design drawings of the fire alarm and mass notification system. RAN's engineers designed a wireless fire alarm system that connected the buildings together through digital alarm communicator transmitters (DACT). The signals from the DACT system were then received by wireless radio transmitters. These transmitters would then wirelessly alert the fire department in case of an incident. Additionally, the transmitters could also send and receive signals to each other, creating a wireless radio mesh network.

RAN has designed sprinkler systems for medical facilities on base, multipurpose buildings, and even a building that was repurposed as a museum. Lastly, our engineers designed several fire suppression systems for a building that housed a server room. RAN designed modifications of a sprinkler system, clean agent system and detection system. The clean agent system used in the server room was FM-200.

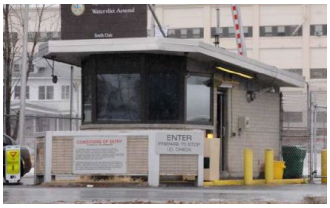
Letterkenny Army Depot

Chambersburg, PA

Construction Cost: $15,000,000; Size: 45,000 sq-ft

RAN Fire Protection Engineering provided a variety of services for the U.S. Army Corps of Engineers for building the Letterkenny Army Depot. The Letterkenny Army Depot includes office space, warehousing, and processing areas. RAN served as the FPDOR and FPQCR for this Design/Build project. Our duties included reviewing the existing drawings and submittals, hazard classification, and designing fire protection systems. Some of the hazardous areas in this building are flammable spray booths and blasting booths. To properly protect the building and its occupants, RAN designed an automatic sprinkler system and a fire pump. Since this is an Army facility, all of the designs were compliant with the Unified Facilities Criteria (UFC).

Federal Projects



Watervliet Arsenal Building 35A

Watervliet, NY

RAN Fire Protection Engineering was brought on as a consultant for the design services for the modifications to Building 35A CO 2 releasing system at the Watervliet Arsenal. RAN provided design documents for the fire alarm drawings which outlined and detailed the required modifications of the CO2 system in accordance with NFPA 12 and NFPA 72.

Stratton Air National Guard Base

Schenectady, NY

When the storage demand at the Stratton Air National Guard Base Hazmat building was increased to include combustible and flammable liquids, RAN was given the task of upgrading the sprinkler system. The retrofit design included an increase in hydraulic demand and the addition of in-rack sprinklers. RAN's design process included analyzing Local and State Building Codes, NFPA standards, and Unified Facilities Criteria (UFC) to determine the most stringent requirements. RAN Fire Protection Engineering performed consulting services for fire protection systems at the Stratton Air National Guard Base. RAN engineers designed sprinkler and high expansion suppression systems for Hangers 2, 7, and 8. A new fire pump house was also designed on this project. The project scope included a code analysis to verify compliance with NFPA standards building codes and ETL's.

Storage Area

The sprinkler system in the Air National Storage Area needed to be updated. RAN Fire Protection Engineering, PC was retained to provide consulting services for the design modifications of the sprinkler system. Since the storage area is on a military base, all of the designs needed to be compliant with the UFC criteria.

West Point: Central Power Plant (CPP)

West Point, NY

RAN Fire Protection Engineering has completed multiple projects at West Point on a variety of buildings. RAN designed a new MAAP and fully addressable fire alarm system and companion MNS for the CPP. Systems we designed include manual pull stations at all the exits, smoke detectors in the control room, heat detectors, and monitor modules for existing Ansul suppression systems. All of the alarms were combination speaker/fire/MNS strobes throughout the building. RAN was also responsible for programming the MAAP Plus Fire Alarm panel, initial and final testing, providing As-Built drawings, and providing a certificate of completion. All designs were in accordance with National Fire Alarm and Signaling Code and NFPA 72.

West Point: Lincoln Hall

West Point, NY

When designing fire protection for Lincoln Hall, RAN also used a new MAAP Plus Fire Alarm System and companion MNS that was compliant with the National Fire Alarm and Signaling Code and NFPA 72. Devices include manual pull stations and every exit, duct detectors in the air handling units, smoke detectors, control modules for air handler shutdown, monitor modules for sprinkler flow, tamper devices, and fire pump controller outputs, a relay control for release of existing door holders, and heat detectors. Alarms were combination speaker/fire /MNS strobes and were connected to a remote display on the first floor. Lastly, RAN programmed the MAAP Plus Fire Alarm panel, provided As-Built drawings, and initial and final testing of the system.

Phone: (518) 275-0791 www.ranfpe.com 417 New Karner Rd Albany, NY 12205 Fax: (518) 275-0792

Federal Projects

West Point: Johnson Stadium

West Point, NY

The Johnson Stadium design included MAAP Plus fire alarm and MNS, designed in accordance with National Fire Alarm & Signaling Code, and NFPA 72. Devices installed as a result of our design include heat detectors, manual pull stations at all exits, duct detectors, monitor modules to monitor existing sprinkler system, control modules for air handler shutdown and main gas valve shutoff. Alarms were all speaker/fire/MNS strobes throughout, per UFC and Department of Army requirements. Lastly, RAN programmed the MAAP Fire Alarm panel, performed initial and final testing, and provided As-Built drawings and a certificate of completion and test reports.

West Point: Jewish Chapel

West Point, NY

While the Jewish Chapel was undergoing a remodel, RAN designed a new Monaco Enterprises Analog Addressable Panel (MAAP) and a fully addressable Fire Alarm System and companion Mass Notification System (MNS). The devices were designed to comply with National Fire Alarm Signaling Code, NFPA 72, and wired in Class B configuration. Devices included heat and smoke detectors, manual pull stations at all exits, duct detectors in existing locations, monitor modules, control modules for air handler shutdown, and all the alarms were combination speaker/strobe. RAN programmed the MAAP Plus Fire Alarm panel and provided initial and final testing of the system installed.

Thomas P. O'Neill Federal Building

Boston, MA

Construction Cost: $1,500,000 Size: 14,000 sq-ft

RAN Fire Protection Engineering provided professional design and engineering services to produce a feasibility study. Construction documents were produced that were necessary for the build-out of the new space on the 9th floor of the O'Neill Federal Building. The documents were code compliant and included all the fire protection requirements that were mentioned in the GSA criteria for the fire protection engineer on the project.

Fort Drum Inn

Fort Drum, NY

The purpose of this project was to convert the former Fort Drum Inn, also known as building 4205, into a Modern General Purpose Administration facility. The facility was designed to support at minimum 250 people and complied with all applicable army and federal government criteria. New mechanical, electrical, communications, elevator, fire suppression and alarm systems were all constructed with this repurposed building. RAN covered the Fire Protection Engineering consulting services that were requested for this project. RAN fulfilled the request to complete fire protection engineered construction plans and consulting services. To accomplish their services, RAN provided modifications to the design of building fire alarm, detection/mass notification, and sprinkler systems based on the changes to the building design per MOD P00005. Finally, to complete their requested services, RAN reviewed the Building Code analysis, Life Safety Code analysis, and water supply analysis based on changes to the building design per MOD P00005.

Federal Projects

Fuel Cell Hangar Aircraft

Barnes Westfield, MA

RAN was requested to provide fire protection services for Building 27, corrosion control and fuel maintenance hangar, at Barnes Air National Guard. The project involved the repair and replacement of fire protection systems, such as sprinklers, foam systems, special suppression, and alarm systems. RAN evaluated the existing systems to determine what adjustments needed to be made, and then developed new system designs.

Mechanicsburg Navy Depot: Sprinklers in Building

Mechanicsburg, PA
Construction Cost: $75,000,000

Mechanicsburg Navy Depot is an 806-acre naval supply depot located in Pennsylvania. The depot is home to over 150 warehouses containing a combined 8,800,000 square feet of space. It is believed that the buildings were built in the WW2 era, potentially earlier. Some of the buildings contain combustible obstructed construction, which is wood construction with deep solid beams less than 7 feet on center.

The government specifications called for ESFR sprinklers (early suppression fast response) for the storage areas to be installed, but we quickly identified at the start of the project that ESFR sprinklers are not permitted to be installed in combustible obstructed construction areas.

RAN developed an alternative design utilizing CMSA (control mode specific application) storage sprinklers, which were designed for this type of situation in older buildings. The solution had minimal impact on the sprinkler flow demands and did not impact the desired storage height, so we were able to provide a solution that had essentially no cost impact for construction.

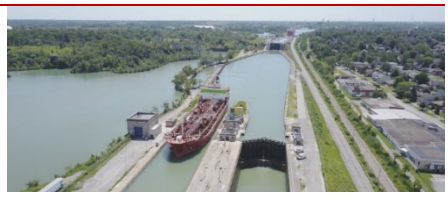
William R. Cotter Federal Building

Hartford, CT

RAN provided fire protection design services to the renovations of William R. Cotter Federal Building in downtown Hartford, CT. It was determined that the former sprinkler system was not up to code. As a result, RAN designed a new sprinkler system that would be compliant with all applicable fire codes and spans across the combined 74,050 square feet.

St. Lawrence Seaway Visitor's Center

Massena, NY



Before the observation deck or building was completed, RAN Fire Protection Engineering provided design services for the St. Lawrence Visitor's Center. This project required construction plans and consulting services for the proposed three-story building. RAN divided their services into two phases. The first phase was "Construction Documents", which was the creation of Fire Protection design drawings. These drawings included hazard classifications of the building project area, sprinkler, and piping location plans in compliance with NFPA 13, and hydraulic calculations for NFPA 13 compliance. The following phase was "Construction Administration Services". This phase included responses to Bidder's questions and RFI's, issuance of addenda as required, and the review of contractor's submittals and hydraulic calculations. RAN also provided any other additional services that were needed to complete this project and increase occupant safety.

Federal Projects

Ogdensburg Federal Patrol Building

Ogdensburg, NY
Construction Cost: $150,000 Size: 40,000 sq-ft

The Robert C. McEwen U.S. Custom House is the oldest building in Ogdensburg, New York and the oldest within the General Services Administration's building inventory. Constructed in 1809–1810, the building is closely linked to the development of Ogdensburg and shipping along the St. Lawrence River. The U. S. Custom House is a fine example of the utilitarian buildings constructed in native limestone in the late 18th and early 19th centuries in the Ogdensburg region. The building interior dates entirely from 1937, when a complete remodeling was undertaken to provide offices for the U.S. Customs Service. Vestiges of the 1809– 1810 structure remain in transverse load-bearing masonry walls, the closets under the eaves of the third floor, and the original beams.

This project included a complete overhaul of the building's fire protection and life safety systems utilizing NFPA 914 Code for the Fire Protection of Historic Structures and NFPA 101, Life Safety Code. RAN Fire Protection Engineering served as the lead fire protection engineer for the project. Due to the limitations associated with the historic nature of the building, alternative design approaches were necessary to provide an adequate level of life safety. A performance-based fire protection design was incorporated into the project. The design was based on the anticipated fire severity predicted by fire modeling. A final cost-effective design that addressed the specific hazards in the buildings was accomplished.

Stratton Air Guard Building 32 & 34

Schenectady County Airport, NY
Size: 15,000 sq-ft

The Stratton Air National Guard Buildings 32 and 34 located in the Schenectady County Airport, needed updated fire protection systems and code analysis. RAN's part for the Stratton Air National Guard project included designing a sprinkler and fire alarm system for buildings 32 and 34. In additional to the design of the systems, tests were conducted to ensure everything worked correctly. Site inspections were performed to document existing conditions and a code analysis was conducted to meet the requirements of NFPA and the authority having jurisdiction. Additional services included the design layout of CO detectors and commissioning.

Ft. Drum Guthrie Server Rm Fire Suppression

Fort Drum, NY
Construction Cost: $200,000 Size: 500 sq-ft

The work that needed to be performed included the relocation of existing emergency stop button, installation of a new gas fire suppression system, associated piping, and controls, and new through roof exhaust fan. In addition to that work, existing sprinkler heads needed to be replaced with higher temperature rating sprinkler heads. Finally, the new fire suppression system had to be compatible with the existing Mass Notification System.

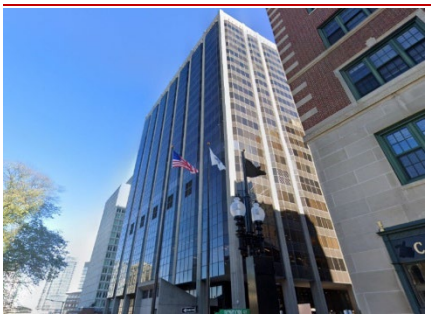
RAN Fire Protection Engineering designed several fire suppression systems for the building. RAN designed modifications of a sprinkler system, clean agent system, and detection system. The clean agent system was FM-200 and all new equipment and systems were compatible with the current Building Automation System. All work was completed in accordance with UFC 4-510-01.

Federal Projects

Hopewell Junction Fire Flow

Duchess County, NY
Construction Cost: $1,000,000 Size: 28 buildings

RAN was retained to provide fire protection engineering consulting services in evaluating the needed fire flow for 28 buildings located within the Hopewell Precision Water System. RAN established the needed fire flow in accordance with New York State and Duchess County regulations, which was determined utilizing the Insurance Services Office (ISO) “Guide for Determination of Needed Fire Flow”. Their services kept the community and their information safe.



J.W. McCormack Federal Office Building

Boston, MA
Construction Cost: $500,000 Size: 16,000 sq-ft

This project was turned around quickly to the Environmental Protection Agency in order to stay on the tight construction schedule. RAN delivered a detailed fire sprinkler design and provided oversight for life safety planning of the space. RAN was also supplied with a significant amount of water even when new plumbing fixtures reduced water consumption by approximately 642,000, which is 32% over code requirements.

Butler VA Medical Center

Butler, PA
Construction Cost: $5,000,000 Size: 30 Buildings

The Butler VAMC is a medical center where healthcare experts focus on the needs of Veterans, and their families or caregivers. RAN Fire Protection Engineering was retained to provide consulting services at the Butler VA Medical Center. Butler VAMC was looking to replace their water tank. RAN completed a hydraulic model study for the fire protection flow calculations. RAN conducted an on-site evaluation to establish Fire Protection Flow Demands for the entire campus. The study established the campus fire flow required to size the water storage for the facility.

Quench Tank Watervliet Arsenal

Watervliet, NY

RAN Fire Protection Engineering was retained by Watervliet Arsenal to analyze the fire suppression system that is being altered by a quench tank. The heat detector activates a local application CO2 suppression system installed on the quench tank to suppress a fire within the tank. Due to changes in the product being quenched in the tank there has been an increase in nuisance discharges. These are due to an increase in the size of the product being quenched and therefore an increase in the amount of time it takes to align the product with the quench tank and lower the product in. In efforts to address the nuisance discharges, the existing heat detector was upgraded to a rate-of-rise heat detector with a higher rate-of-rise temperature setting.